

### ABSTRACT OF THE DISCLOSURE

A magnetic recording medium includes a nonmagnetic substrate on which is provided at least a softly magnetic under-film, an orientation control film that controls an orientation of a film directly above, a perpendicular magnetic recording film having an axis of easy magnetization oriented to be mainly perpendicular to the substrate and a protective film, wherein the orientation control film has a material composition forming a C11<sub>b</sub> structure. The magnetic recording medium is manufactured by a method including carrying out, in order, at least a step of forming a softly magnetic under-film on a nonmagnetic substrate, a step of forming an orientation control film that controls an orientation of a film directly above, a step of forming a perpendicular magnetic recording film having an axis of easy magnetization oriented to be mainly perpendicular to the substrate, and a step of forming a protective film. A magnetic recording and reproduction apparatus includes the magnetic recording medium and a magnetic head that records and reproduces information on the magnetic recording medium, wherein the magnetic head is a magnetic monopole head.